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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/567,907	02/10/2006	Taishi Shigematsu	126966	5658
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EXAMINER				
HEINER, LIAM J				
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08/13/2008		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/567,907

Applicant(s)

SHIGEMATSU ET AL.

Examiner

Liam J. Heincer

Art Unit

1796

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 February 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SF/02)
Paper No(s)/Mail Date 2/2006 and 11/2006
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 11-16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

A broad range or limitation together with a narrow range or limitation that falls within the broad range or limitation (in the same claim) is considered indefinite, since the resulting claim does not clearly set forth the metes and bounds of the patent protection desired. See MPEP § 2173.05(c). Note the explanation given by the Board of Patent Appeals and Interferences in *Ex parte Wu*, 10 USPQ2d 2031, 2033 (Bd. Pat. App. & Inter. 1989), as to where broad language is followed by "such as" and then narrow language. The Board stated that this can render a claim indefinite by raising a question or doubt as to whether the feature introduced by such language is (a) merely exemplary of the remainder of the claim, and therefore not required, or (b) a required feature of the claims. Note also, for example, the decisions of *Ex parte Steigewald*, 131 USPQ 74 (Bd. App. 1961); *Ex parte Hall*, 83 USPQ 38 (Bd. App. 1948); and *Ex parte Hasche*, 86 USPQ 481 (Bd. App. 1949). In the present instance, claim 11 recites the broad recitation "n1 represents an integer of 1 or more", and the claim also recites "n1 represents 2 to 1000" which is the narrower statement of the range/limitation.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2, and 4-9 are rejected under 35 U.S.C. 102(b) as being anticipated by Seiden et al. (GB 1458570) when taken with Applicant's admission (pg. 11, original specification).

Considering Claims 1, 2, 8, and 9: Seiden et al. teaches a method comprising polymerizing glycerin/a polyhydric alcohol in the presence of sulfuric acid/an oxidation and dehydration catalyst (2:23-46). While Seiden et al. does not disclose the formation of ketone groups, sulfuric acid will necessarily provide ketone groups in the polymer as evidenced by the disclosure presented in the original specification (page 11).

Considering Claim 4: Seiden et al. teaches the polyglycerol as having up to 7 repeat units/molecular weight of greater than 74 (5:1).

Considering Claim 5: Seiden et al. does not teach an end capping reaction. Therefore the end groups would be hydroxyl groups.

Considering Claim 6: Seiden et al. teaches unreacted hydroxyl groups (3:72-80). Therefore the polymer is capable of crosslinking.

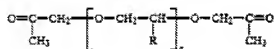
Considering Claim 7: Seiden et al. is silent towards the number of ketone groups in the polymer. However, the reference(s) teaches all of the disclosed ingredients and process steps. Therefore, the claimed effects and physical properties, i.e. the ratio of ether to ketone groups would inherently be achieved by a process using the disclosed ingredients and process steps. If it is the applicant's position that this would not be the case: (1) evidence would need to be provided to support the applicant's position; and (2) it would be the Office's position that the application contains inadequate disclosure that there is no teaching as to how to obtain the claimed properties with only the disclosed ingredients.

Claim 11 is rejected under 35 U.S.C. 102(b) as being anticipated by Seiden et al. (GB 1458570) when taken with Applicant's admission (pg. 11, original specification).

Considering Claim 11: Seiden et al. teaches a method comprising polymerizing glycerin/a polyhydric alcohol in the presence of sulfuric acid/an oxidation and dehydration catalyst (2:23-46). While Seiden et al. does not disclose the formation of ketone groups, sulfuric acid will necessarily provide ketone groups in the polymer as evidenced by the disclosure presented in the original specification (page 11).

Claims 1, 3, 4, and 7 are rejected under 35 U.S.C. 102(b) as being anticipated by Sanderson et al. (US Pat. 4,980,514).

Considering Claim 1: Sanderson et al. teaches a polymer of the formula



/a polymer of formula I, where Ra and Rb are aliphatic groups, Rc is a divalent groups with an ether terminal, and n1 is equal to 2 (Formula II).

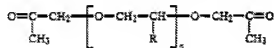
Considering Claim 3: Sanderson et al. teaches Rc as being a direct bond or (CH₂)₂-O (Formula II).

Considering Claim 4: Sanderson et al. teaches the molecular weight as being 230 or 2,000 (4:13-20).

Considering Claim 7: Sanderson et al. teaches the ratio of ether bonds to ketone groups as being from 0.04 to 1 (Formula II).

Claim 10 is rejected under 35 U.S.C. 102(b) as being anticipated by Sanderson et al. (US Pat. 4,980,514).

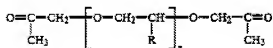
Considering Claim 10: Sanderson et al. teaches a polymer of the formula



/a polymer of formula I, where Ra and Rb are aliphatic groups, Rc is a divalent groups with an ether terminal, and n1 is equal to 2 (Formula II). Sanderson et al. also teaches the ketone polymer being prepared from a polyol additionally containing 1 to 50 polyethylene oxide units (Formula IV).

Claim 11 is rejected under 35 U.S.C. 102(b) as being anticipated by Sanderson et al. (US Pat. 4,980,514).

Considering Claim 11: Sanderson et al. teaches a composition comprising a polymer of



the formula /a polymer of formula I, where Ra and Rb are aliphatic groups, Rc is a divalent groups with an ether terminal, and n1 is equal to 2 (Formula II).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 12-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sanderson et al. (US Pat. 4,980,514) as applied to claim 11 above, and further in view of Narayan et al. (US 2003/0213939).

Considering Claim 12-16: Sanderson et al. teaches the polymer composition of claim 11 as shown above.

Sanderson et al. does not teach adding a conductive filler to the composition. However, Narayan et al. teaches adding carbon nanotubes functionalized with carboxylic

acid groups (¶¶0013) or a metal particle (¶¶0021) to a polymer with ketone and ether groups (¶¶0009). Sanderson et al. and Narayan et al. are analogous art as they are concerned with the same field of endeavor, namely polyether ketone polymer compositions. It would have been obvious to a person having ordinary skill in the art at the time of invention to have added the filler of Narayan et al. to the polymer of Sanderson et al., and the motivation to do so would have been, as Narayan et al. suggests, to form an electrically conductive article (¶¶0007).

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See PTO Form 892.

Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Liam J. Heincer whose telephone number is 571-270-3297. The examiner can normally be reached on Monday thru Friday 7:30 to 5:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Eashoo can be reached on 571-272-1197. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Mark Eashoo, Ph.D./
Supervisory Patent Examiner, Art Unit 1796
1-Aug-08

LJH
July 28, 2008